

## ABSTRACT

**[1061]** Method and apparatus for pre-coding in a communication system are disclosed. In a communication system, an origination station transmits a non pre-coded pilot signal and a pre-coded data signal. A destination station estimates a metric characterizing a communication channel using the non pre-coded pilot signal. The metric is then used to pre-code the data signal to be transmitted. The destination station may also use the estimated metric for demodulation of the pre-coded data. However, since the pilot signal is not pre-coded, the metric for the desired multi-path of the pilot channel differs from that of the pre-coded data channel, which may reduce the demodulation performance. To improve the channel estimation for data demodulation, the origination station may additionally transmit a dedicated pilot signal that is pre-coded in the same manner as the data signal destined to a specific user.

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